



**United States Environmental Protection Agency
Region II**

Date: **NOV 14 2007**

Subject: Removal Site Evaluation for the Tidewater Baling Site, Newark, Essex County, New Jersey

From: Nick Magriples, On-Scene Coordinator *N. Magriples*
Removal Assessment and Enforcement Section

To: File

The Removal Action Branch (RAB) received a request from the New Jersey Department of Environmental Protection (NJDEP) on September 25, 2006 to evaluate the Tidewater Baling Site (Site) for a CERCLA removal action.

The Site is located at 26 St. Charles Street in a mixed residential and commercial portion of Newark, Essex County, New Jersey. The property is a long narrow parcel, approximately 2.5 acres in size, bordered by Conrail to the north, St. Charles Street to the west, and the Ironbound Recreation Center (IRC) to the south. Residences line the opposite end of St. Charles Street and the adjoining streets. The closest residence is approximately 100 feet from the Site. A number of industrial facilities are present north of the Site.

The IRC consists of a soccer field with an artificial cover, installed approximately seven years ago, and an indoor swimming area. The field was previously an uncovered ball field. Until the mid-1960s various industrial entities, including Celanese Corporation of America, were situated at the present location of the IRC. The recreation center was originally built in 1968 after Celanese donated the land to the city. The City of Newark, the NJDEP and Celanese Corporation have been addressing the contaminated areas at the IRC through a variety of mechanisms. The ball field portion of the IRC was remediated and a "no further action" recommendation issued by the NJDEP.

Since it began operating at the Site in 1945, Tidewater Baling Corporation processed and compacted a variety of ferrous and nonferrous scrap metal, including drums, automobiles, transformers, and industrial scrap for recycling. It is reported that poor housekeeping and oil spills from the operations impacted the Site and a portion of the adjoining ball field. It is believed that operations at the Site ceased at least several years ago.

There are four derelict, brick structures on the Site; an office, a garage and a storage building all located near St. Charles Street, and a two-story building on the eastern end. An old baler that was used to process the scrap metal is situated to the east of the storage building. The "new" baler, which was constructed in 1957, is located near the eastern end of the Site. The baler pit is constructed of concrete and extends approximately three stories below grade. The pit was used to contain any oil that was released during the baling operations. The water and oil that accumulated in the pit was pumped into an aboveground storage tank to allow the oil and water

to separate. The water was then discharged onto the ground and the oil reportedly reused in the baler hydraulic system.

Aside from the driveway onto the Site, the majority of the Site is unpaved. A concrete retaining wall separates most of the Site from the adjoining properties except for along St. Charles Street and an area at the rear of the facility where a railroad spur enters the Site. A deteriorated brick wall spans a portion of the frontage along St. Charles Street. The area behind the office is littered with scrap, debris, and unused machinery. The buildings and walls are covered in graffiti. Soils in various portions of the Site appear to include ash and fine metal particles and shavings. Other areas contain significant petroleum staining, especially around the baler control building and the baler pit. The baler pit contains oily water. There are three empty 10,000 gallon tankers at the rear of the facility that block a railroad spur. Within 50 feet of this area there are approximately 40 mostly empty, plastic drums. There is one open-top metal drum filled with overflowing oily-water and oil booms. A couple of empty metal drums were identified on the adjacent property in the former scoreboard area of the IRC.

In 1986, Tidewater Baling Corporation reportedly excavated soil contaminated with PCBs and heavy metals from the scoreboard area of the ball field but failed to address the source. EPA performed a CERCLA removal action at the Site in 1989 which included construction of limited fencing in the scoreboard area of the recreational center and placement of berms and booms to restrict migration of oily discharges into and out of this area. Sampling conducted by EPA revealed elevated levels of heavy metals and PCBs in the soils, and in the oil being used in the process.

In 1990, the company signed an Administrative Order on Consent (AOC) with EPA to address the baler, initiate remedial actions, and pay Toxic Substances Control Act (TSCA) penalties. The facility reportedly continued to impact both on-site and off-site areas. In 1992, the company signed an AOC with the NJDEP to conduct a Remedial Investigation/Feasibility Study and to remediate the contamination. A Remedial Action Work Plan was approved by the NJDEP in 1997 which called for a limited excavation of 2,000 tons to an approximate four foot depth. This action was never implemented by the company.

The New Jersey Schools Construction Corporation completed a site investigation at the Site in 2003 in order to evaluate the property for a new public high school. Fifteen test pits were excavated to between 4.5 to 8.5 feet in depth. Six borings were drilled to approximately 9.5 feet. Elevated levels of heavy metals, PCBs, and petroleum hydrocarbons were identified. The highest concentrations of heavy metals (lead (32,000 mg/kg), copper (74,000 mg/kg), zinc (39,000) mg/kg, mercury (71 mg/kg), silver (120 mg/kg), arsenic (60 mg/kg), cadmium (91 mg/kg), nickel (3400 mg/kg), and antimony (340 mg/kg)) were identified in samples collected from depths less than one foot. PCBs were identified at 117 mg/kg at one location at a depth of three feet. According to the investigation, except for certain limited areas, it appears that most of the significant heavy metal and PCB soil contamination was identified at four feet or less. The property was not selected for construction since it was estimated that approximately 45,000 cubic yards of soil would need to be excavated at an estimated cost of five to seven million dollars.

In May 2005, the NJDEP initiated a response action at the Site to remove oil from the baler pit; excavate a limited area of oil-saturated soil; and remove and dispose of cylinders, and drums and tankers filled with petroleum products and hazardous waste. In July 2006, the NJDEP completed the installation of a 465-foot fence with two gates at a portion of the unsecured Site along St. Charles Street, which was the primary access for trespassers to the Site. Later that year, additional fencing was added to encompass the entire Site except for a small area at the rear of the Site, near an inactive railroad spur.

The EPA OSC reconnoitered the Site several times between November 2006 and January 2007. During these visits there was evidence that persons were continuing to access the Site even with the fencing. It was also observed during a period of heavy rainfall that runoff from the sloped portion of the Site near the gated entrance was making its way towards St. Charles Street. The sidewalk in the area in front of the facility is made up of a combination of cobblestone, gravel, and dirt. A site entry was completed on March 14, 2007 by EPA with the Removal Support Team (RST) to observe on-site conditions and to conduct air monitoring. On April 5, 2007, EPA and RST collected 19 on-site and off-site surface soil samples and three wastewater samples. The on-site soil samples were collected from oil-stained areas as well as along the western portion of the Site where the potential for contamination to migrate onto St. Charles Street via storm water runoff appeared to be the greatest. The off-site soil samples were collected along St. Charles Street in order to determine if contamination had migrated from the Site.

It should be noted that during both site entries conducted by EPA, persons were observed accessing the Site either to scavenge scrap metal or as a shortcut from St. Charles Street to Berlin or Christie Street. The local police visited the Site looking for a suspected criminal that reportedly may have been living in one of the buildings.

Analysis of the on-site surface soil samples collected by EPA in April 2007 revealed lead concentrations ranging from 895 mg/kg to 3,790 mg/kg in the six samples collected from the sloped area near St. Charles Street. The sample containing 895 mg/kg was situated nearest to the fence line. Of the six off-site soil samples collected directly adjacent to or down gradient from the Site, a maximum lead concentration of 572 mg/kg was identified directly adjacent to the gate. A background soil sample collected along St. Charles Street that was found to contain a lead concentration of 1,280 mg/kg may have been impacted by its location near a former railroad line. Soil samples collected at the rear of the facility from oil-stained areas revealed the presence of lead, copper, zinc, and PCBs at concentrations of 17,700 mg/kg, 1,670 mg/kg, 7,150 mg/kg, and 31 mg/kg, respectively.

All the materials listed above, except for petroleum hydrocarbons, are CERCLA designated hazardous substances as defined in 40 CFR Table 302.4. The Site is defined as a facility under section 101(9) of CERCLA, 42 U.S.C. § 9601(9). The hazardous substances in the soil at the Site constitute a "release," as defined in Section 101(22) of CERCLA, 42 U.S.C. Section § 9601(22).

Conditions at the Site meet the requirements of Section 300.415(b) of the National Contingency Plan (NCP) for the undertaking of a CERCLA removal action. Factors from the NCP Section 300.415(b)(2) that support conducting a removal action at the site are discussed below:

There is a potential exposure to a hazardous substance by nearby human populations (§300.415(b)(2)(i)). CERCLA hazardous substances have been identified in the soils at the Site and, to a lesser degree, along the frontage with St. Charles Street. Residences are located in the neighborhood around the Site. Persons, including children, have been observed walking along the Site's frontage on St. Charles Street. Based on observations, the Site is being accessed by trespassers, some of which scavenge for scrap metal. There are various locations along the perimeter of the Site that are accessible, including the incomplete fencing along the railroad spur. It is reported that the buildings at the Site are used by homeless people. A person entering onto the Site, and even more so, those digging to locate scrap metal, could be exposed to the hazardous substances. Due to the proximity of the neighborhood and the ball field, there is a potential for children to access the Site. Potential exposure pathways include incidental soil ingestion and possibly dust inhalation.

Lead is a cumulative poison where increasing amounts can build up in the body eventually reaching a point where symptoms and disability occur. Particularly sensitive populations are women of child-bearing age, due to the fetal transfer of lead, and children. Cognitive deficits are associated with fetal and childhood exposure to lead. An increase in blood pressure is the most sensitive adverse health effect from lead exposure in adults. Effects on the kidney, nervous system and heme-forming elements are associated with increasing blood lead concentrations, both in children and adults. Other symptoms include: decreased physical fitness, fatigue, sleep disturbance, aching bones, abdominal pains, and decreased appetite.

The relationship between soil lead concentrations and the consequent impact on blood levels in children has been studied through numerous epidemiological studies. Based on these epidemiological studies, it is generally believed that persistent exposure to soil-borne lead results in an increase in blood lead levels (in children) of 1 to 9 ug/dl per 1,000 ppm lead in soil. Although this relationship may become less robust as exposure durations decrease and soil lead levels increase, it nonetheless provides compelling evidence of the potential lead hazard associated with the excessive lead concentrations found in the soil at the Site.

PCBs are readily absorbed into the body by ingestion, inhalation, and dermal exposure following ingestion of dust or soil, inhalation of PCB-laden dust, or direct dermal contact with PCBs in soil or dust. They may persist in tissues for years after exposure stops. Chemical acne, dark patches on skin, burning eyes and skin, and unusual eye discharge have been reported by all routes of exposure. Generally, onset may not occur for months. These effects may last for months. Liver damage and digestive disturbance have been reported. PCBs may impair the function of the immune system and at high levels have been shown to produce cancer and birth defects in laboratory animals. Although PCBs are suspected as a human carcinogen, they have a very low potential for producing acute toxic effects. PCBs bioaccumulate to concentrations that are toxic.

A number of human studies indicate that PCBs can cross the placenta and locate in the fetus. PCBs also concentrate in human breast milk.

High levels of hazardous substances or pollutants or contaminants in soils, largely at or near the surface, may migrate (40 CFR §300.415(b)(2)(iv)). Based on topography and lead concentrations in soil, it appears that contaminated soil is migrating offsite via storm water runoff, and collecting along the sidewalk and curb areas on St. Charles Street. During dry and windy conditions this material could potentially become airborne.

Weather conditions exist that may cause hazardous substances to migrate or be released (§300.415(b)(2)(v)). During heavy or sustained rainfall events, storm water runoff from the Site flows onto St. Charles Street, aiding the transport of contaminated soil.

At the request of EPA, the New Jersey Department of Health and Senior Services (NJDHSS), through a cooperative agreement with the Agency of Toxic Substances and Disease Registry (ATSDR), prepared a Letter of Technical Assistance (LTA) to evaluate potential health risks posed by lead-contaminated soil at the Site. According to the LTA, although the off-site lead levels are not significantly elevated, because of the proximity of elevated levels near the fence line that could migrate, the off-site levels may potentially increase in the future. The NJDHSS concluded that conditions at the Site represent a public health hazard regarding exposures via trespassing and an indeterminate public health hazard regarding the lead contamination along the sidewalk area of St. Charles Street.

Due to concerns for potential air migration of contaminants from the Site onto the adjoining ball field, the NJDHSS collected dirt/dust samples from the surface of the artificial cover at the IRC on August 16, 2007. Elevated levels of lead were detected in the dirt embedded in the turf. Further analysis of the samples and of the turf fibers identified that the turf itself was contributing to the lead contamination. The EPA Environmental Response Team has been tasked to further study the field in an attempt to better define whether the lead contamination could potentially be from the Tidewater Baling Site or from the artificial cover. The NJDHSS recommended to the City of Newark on October 29, 2007 that access to the athletic field be temporarily restricted until further notice. The athletic field will be evaluated separately from the Site by RAB.

Based on the available information, a CERCLA removal action is warranted at the Site to address the potential threats posed to the community surrounding the Site and to the persons that enter onto the Site.